Nehemiah Reinforced Sdn Bhd v Patrick Cyril Augustine & Anor

HIGH COURT (SHAH ALAM) — CIVIL SUIT NO 22–626 OF 1997
MARIANA YAHYA J
30 NOVEMBER 2011

Trade Marks — Patents — Validity — Novelty and inventiveness lacking — Action to declare patent invalid — Protection in patent sought over specific range in length of tie members used in building and design of retaining walls — Patent failed to explain special character or quality of range — Whether alleged invention vague and insufficient and incapable of being understood

The plaintiff, a professional engineering firm, was in the business of manufacturing, supplying, designing and installing retaining walls using a reinforced soil system known as 'Nehemiah Anchored Earth Wall'. The defendants owned a Malaysian-registered patent ('the patent') in respect of an alleged invention concerning stabilisation of retaining walls using multiple anchors. Specifically, the claim in the patent sought protection over the length of the tie members used in the design and building of retaining walls — that it should be in the range of 0.8 to 1.2 times the height of the wall ('the range'). The patent, however, did not disclose the workability of the range or its technical advantage with reference to the background art. The plaintiff was working on a project when the defendants threatened to sue for infringement of the patent. To prevent disruption of the project and on condition validity of the patent was not admitted, the plaintiff agreed to pay the defendants ('the agreement') RM9.50 per square metre of wall built by the plaintiff whenever it used the multi-anchor wall system described in the patent. In return for such payment, the defendants' undertook not to take legal action for infringement of patent. The plaintiff subsequently engaged solicitors to study the validity of the patent and was advised it did not merit a monopoly to the defendants or justify payment of royalty. The plaintiff brought the instant action to, inter alia, declare the patent invalid and seek refund of RM42,818.51 it had paid the defendants' pursuant to the agreement. The plaintiff claimed the patent was invalid because the range was neither new nor involved any inventive steps as it was already in use and in the public knowledge even before the patent was registered. The defendants counter claimed for RM877,295 as balance of fees due from the plaintiff for the use of the patent pursuant to the agreement.

Held, allowing the claim with costs, ordering the defendants to refund the RM42,818.51 it had received from the plaintiff and dismissing the counterclaim with costs:

(1) The plaintiff had proved the defendants' patent was invalid as it lacked

novelty, did not involve any inventive step and was insufficient in description or disclosure with regard to the special character or quality of the range (see para 5).

(2) The range claimed by the defendants in the patent was insufficient, vague and incomplete. By looking at the claim itself, the technical field, the background art, the description and the summary of invention, there was no explanation about the benefit and advantages of why the defendants had chosen or selected the range for a retaining wall. The range was always variable according to the design (see para 45).

(3) Due to lack of explanation as to why the range was chosen, it was not possible to understand the invention from the defendants' description, much less achieve its advantageous effects. The description of the invention and the method by which it was to be performed was insufficient and the benefit of the doubt should be given to the plaintiff (see para 45).

(4) Once the patent was declared invalid, it was null and void from the date of its grant and the agreement between the plaintiff and defendants became frustrated and had no legal effect. The plaintiff was entitled to refund of payments it had made to the defendants (see para 46).

[Bahasa Malaysia summary

Plaintif, sebuah firma kejuruteraan profesional, dalam perniagaan membuat, membekal, mereka cipta dan memasang dinding penghadang dengan menggunakan sistem tanah padu dikenali sebagai 'Nehemiah Anchored Earth Wall'. Defendan-defendan merupakan pemilik paten berdaftar di Malaysia ('paten tersebut') berkaitan ciptaan yang dikatakan itu berkaitan pengukuhan dinding penghadang menggunakan pelbagai pemegang sauh. Tuntutan dalam paten tersebut khususnya memohon perlindungan ke atas panjang tali ikatan yang digunakan oleh ahli-ahli dalam rekaan dan binaan dinding penghadang tersebut — bahawa ia patut dalam julat 0.8 hingga 1.2 kali ketinggian dinding tersebut ('julat'). Paten tersebut, bagaimanapun, tidak menunjukkan julat yang boleh dikerjakan atau kelebihan dari segi teknikal berdasarkan latar belakang seni. Plaintif sedang menjalankan suatu projek apabila defendan-defendan mengugut untuk menyaman kerana pelanggaran paten tersebut. Untuk mengelakkan gangguan kepada projek tersebut dan dengan syarat kesahan paten tersebut tidak diterima, plaintif bersetuju membayar defendan-defendan ('perjanjian tersebut') RM9.50 meter persegi untuk dinding yang dibina oleh plaintif jika ia menggunakan sistem dinding pelbagai pemegang sauh seperti mana digambarkan dalam paten tersebut. Sebagai balasan untuk bayaran tersebut, defendan-defendan mengakujanji untuk tidak mengambil tindakan undang-undang kerana pelanggaran paten tersebut. Plaintif berikutan itu melantik peguam untuk mengkaji kesahan paten tersebut dan dinasihatkan ia tidak mewajarkan monopoli kepada

defendan-defendan atau menjustifikasikan bayaran royalti. Plaintif telah memulakan tindakan ini, antara lain, menegaskan paten tersebut adalah tidak sah dan memohon bayaran balik RM42,818.51 yang telah dibayar kepada defendan-defendan menurut perjanjian tersebut. Plaintif mendakwa bahawa paten tersebut adalah tidak sah kerana julat tersebut bukan suatu yang baru dan tidak melibatkan apa-apa langkah reka cipta kerana ia telah pun digunakan dan dalam pengetahuan awam sebelum paten tersebut didaftarkan lagi. Defendan-defendan menuntut balas untuk RM877,295 sebagai baki yuran daripada plaintif kerana menggunakan paten tersebut menurut perjanjian tersebut.

Diputuskan, membenarkan tuntutan dengan kos, memerintahkan defendan-defendan membayar balik RM42,818.51 yang diterima daripada plaintif dan menolak tuntutan balas dengan kos:

(1) Plaintif telah membuktikan paten defendan-defendan tidak sah kerana tidak menunjukkan kebaharuan, tidak melibatkan apa-apa langkah reka cipta dan tidak mencukupi dalam gambaran atau pendedahan dari segi ciri-ciri atau kualiti istimewa julat tersebut (lihat perenggan 5).

(2) Julat yang dituntut oleh defendan-defendan dalam petan tersebut tidak mencukupi, taksa dan tidak lengkap. Dengan melihat tuntutan itu sendiri, bidang teknikal, latar belakang, gambaran dan ringkasan reka cipta itu tidak menjelaskan tentang kelebihan kenapa defendan-defendan memilih julat tersebut untuk dinding penghadang tersebut. Julat itu sentiasa boleh dipelbagaikan menurut reka bentuk (lihat perenggan 45).

(3) Akibat daripada penjelasan yang tidak mencukupi berhubung kenapa julat itu tidak dipilih, adalah tidak mustahil untuk memahami reka cipta daripada gambaran defendan-defendan, dan tidak kurang pula mencapai kesan faedahnya. Gambaran reka cipta dan cara ia dilaksanakan tidak mencukupi dan keraguan faedah patut diberikan kepada plaintif (lihat perenggan 45).

(4) Setelah paten tersebut diisytiharkan tidak sah, paten adalah terbatal dan tidak sah dari tarikh ia diberikan dan perjanjian antara plaintif dan defendan-defendan dikecewakan dan tiada kesan undang-undang. Plaintif berhak mendapat bayaran balik terhadap bayaran-bayaran yang telah dibuat kepada defendan-defendan (lihat perenggan 46).]

Notes

For cases on patents, see 10 *Mallal's Digest* (4th Ed, 2011 Reissue) paras 1163–1244.

Cases referred to

American Cynamid Company v Berk Pharmaceutical Ltd [1976] RPC 231 (refd)
EMI v Lissen (1939) 56 RPC 23, HL (refd)
Kirin-Amgen Inc v Hoechst Marion Roussel Ltd [2004] UKHL 46, HL (refd)
Vidal Dyes Syndicate v Levinstein Ltd (1912) 29 RPC 245, CA (refd)

Legislation referred to

Patent Act 1983 ss 11, 12, 14(2), 36, 46, 56(1), 56(2), 57, 62
Patent Regulations 1986 reg 13, 13(6)(b)

Teo Bong Kwang (Muhamad Azrul Abdul Hamid with him) (Wong Jin Nee & Teo) for the plaintiff.
Alexander Roy Anthony (ST Rani Christina with him) (Anthony Chew & Lim) for the defendants.

Mariana Yahya J:

FACTS OF THE CASE

[1] The plaintiff is a professional engineering firm carrying on business of building and constructing retaining wall using a system known as 'Anchored Earth System'. The descriptions of the plaintiff's Anchored Earth System are as follows:

> Anchored Earth is a reinforced soil system which is reinforced by galvanized steel tendons and anchored by precast concrete blocks buried in selected backfill materials. The facing is vertical consisting of modular hexagonal shaped concrete panels interlocked together. The system is ideal for urban highway interchanges, railway embankments, bridge abutments, housing retaining walls, marine wall, river walls, secondary containment dykes and military walls.

The plaintiff also provides the drawings showing the Anchored Earth System in the descriptions.

PW3 is the managing director and founder for the plaintiff. The plaintiff's principal activities are manufacturing, supplying, design and installing a reinforced soil system known as 'Nehemiah Anchored Earth Wall' — which consists of pre-cast facing panels and galvanised steel tendons anchored by pre-cast concrete blocks all buried in backfill materials. The business started since 1993.

[2] Malaysian Patent No MY-103619-A was granted to the defendants since 28 August 1993 ('the said patent') who are and have at all material times been entered on the register of patents as grantees and proprietors of the patent. The said patent is in respect of an alleged invention in respect of retaining walls and

in particular to the process of stabilising walls using multiple anchors. The defendants have threatened and continue to threaten to sue the plaintiff for infringement of their said patent.

THE PLAINTIFF'S CASE

[3] The plaintiff filed this action to invalidate defendant's Patent No MY-103619-A granted in 28 August 1993 ('the said patent'). On 6 May 1994, the plaintiff had entered into an agreement with the defendants whereby the defendants undertake not to interfere by way of legal action, the threat of patent infringement or otherwise, in the business operations of the plaintiff in consideration for a fee of RM9.50/m2 of wall area built by the plaintiff where the multi-anchor wall system as described in the said patent is used. Amongst other terms of the agreement, the parties have agreed that the agreement shall not be construed as a recognition or acceptance by the plaintiff of the validity of the said patent (see the said agreement pp 110–111 bundle B (a)).

On 4 March 1994, the plaintiff received a letter alleging that the plaintiff had infringed the said patent at the time plaintiff had already started the project. In order not to disrupt the progress of the project, the plaintiff was forced to enter into the said patent. However the agreement was entered on a specific condition that there is no admission as to the validity of the said patent. The plaintiff would have continued to pay the royalty fee if the plaintiff's lawyer had advised plaintiff that the said patent was valid. Prior to entering the agreement, the plaintiff has sought advice for their legal adviser and was duly advised that there is great possibility that the said patent is not valid. The plaintiff had paid a total of RM42,818.51 to the defendants to date (see pp 98–10 bundle B (a)).

[4] After entering into the agreement, the plaintiff had instructed their former solicitor, Messrs Raja, Daryl & Loh to conduct a careful study on the validity of the said patent. After obtaining the legal advice, the plaintiff concluded that the said patent did not merit a monopoly to the defendants or justify further payment of royalty fees to the defendants. The plaintiff alleged that the said patent seeks to monopolise that the length of the tie members to be within the range of 0.8H–1.2H. Majority of the walls built by the plaintiff is outside this range. Even if the patent is valid, it is unfair for the plaintiff to pay royalty fees for every square meter of wall that have tie members outside the said range.

[5] The plaintiff was advised that a patent shall be invalid if the invention disclosed in the patent lacks novelty/newness and that/or involves no inventive steps as required by the Malaysian Patents Act 1983. For an invention to be new, the invention must not be anticipated by prior art, where 'prior art' consists of everything disclosed to the public anywhere in the world whether by

written publication, oral disclosure, use or in any other way, prior to that date of the patent application and the plaintiff said that the said patent is invalid because it is not new and it also lacks inventive steps. It is said that the said patent relates to an invention which is in the field of reinforced soil which PW3 has extensive experience in this area and by the plaintiff's expert witnesses ie PW1 and PW2.

[6] The plaintiff claims that the invention is not an invention that can be patented since it is not novel. The said patent is already public knowledge and is ordinary. The plaintiff states the particulars of objection to the validity of Patent No MY-103619-A ('the said patent') referred to in the statement of claim herein which the plaintiff will rely ie:

(a) The alleged invention is not new.

PARTICULARS

The said alleged invention formed part of the prior art that it had by the following matter before the priority date of the said alleged invention been disclosed to the public that is to say;

(1) By the following patents published on or before the priority date of the said invention:

(a) US Patent No 4,154,554,

(b) US Patent No 3,922,864

(c) US Patent No 4,154,113

The plaintiff will say that all the matter in each patent relied on was contained in the patent in their patent application stage both as filed and as published and that the priority date of all such matter is earlier than that of the invention the subject matter of the invention in suit.

(2) By the following documents, the subject matter of each documents was all material times common general knowledge:

(a) Reinforced Earth Structure - Recommendation and Rules of the Art, French Ministry of Transport, dated August 1980;

(b) Technical Memorandum (Bridges) BE 3/78 Retaining Walls and Bridge Abutments for Embankments, Department of Transport, United Kingdom, dated 1978;

(c) Wallace, M., 'The Many Types of Concrete Retaining Walls' Concrete Construction, July 1987;

(d) Palmer, W.D., 'Holding Back The Earth', Concrete International, November 1987;

(e) Jones, C.J., 'Earth Reinforcement and Soil Structure' Butterworth & Co, (Publisher) Ltd, 1985, and

(f) Chiu, H.K., Wong, A.K.W and Lee C.H., 'Reinforced Earth

Walls in Malaysia', 9th South East Asian Geotechnical Conference Paper, Bangkok, Thailand, December 1987.

(3) By the following users. The subject matter of each of the users was at all material times common general.

(a) Reinforced earth retaining wall built at the Chujitsu commercial complex in Taman Segar, Cheras, Kuala Lumpur in 1989-1986;

(b) Reinforced earth retaining wall at Bandar Manjalela at Jalan Damansara, Kuala Lumpur completed in 1986;

(c) Reinforced earth embankment wall leading to the Prime Minister's office and bridge abutment along Jalan Kuching, Kuala Lumpur in 1982;

(d) Road Embankment Walls at Damansara Town Centre, Kuala Lumpur, located in Kuala Lumpur bounded by three major roads, namely, Jalan Johar, Jalan Semanthan and Jalan Beringin completed in June 1985;

(e) Bridge Abutment in Johor Bharu located at Lot 347, Mukim Plentong, Johor Bahru completed in May 1986; and

(f) All the reinforced earth projects described in the conference paper entitled, 'Reinforced Earth Wall in Malaysia' by H.K Chiu, A.K.W Wong and C.H Lee, 9th Southeast Asian Geotechnical Conference, Bangkok, Thailand, 7-11 December 1987.

(b) The alleged invention involves no inventive step.

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The alleged invention the subject of the patent involved no inventive step in that it was obvious to a person skilled in the art, having regard to the matter which formed part of the prior art before the priority date of the alleged invention. The plaintiff will rely upon all matters set out in paragraphs (1),(2) and(3) under the particulars of (i).

(c) The description and/or specification of the said patent does not disclose the invention in a manner sufficiently clear and complete for it to be evaluated and to be carried out by a person having ordinary skill in the art and/or it has failed to state any advantageous effects with reference to the background art.

PARTICULARS

(1) The alleged invention is alleged to be a process of stabilising walls using multiple anchors and the claims are limited to the length of the tie members in the range of 0.8H to1.2H where H is the height of the panel (hereafter referred to as 'the said Range") but there are no

disclosure in the body of the specification of any technical advantages or technical advancement or advantages effects to be achieved or the disadvantages to be overcome by the said range with reference to the background art.

(2) There is also no disclosure in the body of the specification of the workability of the said range.

(3) The alleged invention is also alleged to be a method of installing a retaining wall according to claim 1, before the tie members are installed at each level, the backfill material is spread to a desired depth and than compacted but there are no disclosure in the body of the specification of any method of spreading the backfill material or the precise description of the desired depth or the descriptions on the method or process of compaction.

[7] The plaintiff's claims:

(a) an order that Malaysian Patent No MY-103610-A be declared invalid:

(i) that the defendant return to the plaintiff all monies paid to the defendants pursuant to the agreement dated 6 May 1994 within 14 days from the date hereof.

(b) a declaration that neither the use of the process as described in the plaintiff's Anchored Earth System herein referred to nor the said Anchored Earth System considered as an article nor the supply thereof to third parties constitute an infringement of Malaysia Patent MY-103619-A.

[8] The defendants in their re-amended statement of defence and amended counterclaim denied all the allegations made by the plaintiff in the amended statement of claim and put the plaintiff to full proof thereof. The defendants aver that the said patent is and always valid and the registration thereof is still and has at all material times been valid and subsisting. The defendants claim that the said patent is a patentable invention in that it is new and relates to retaining walls and particular to the process of stabilising walls using multiple anchors.The defendants' patent specifications are sufficiently clear and concise in enabling a person having ordinary skill in art to understand, construct and work the defendants' invention. By an agreement dated 6 May 1994 made between the plaintiff of the one part and the defendants collectively of the other part ('the said agreement') the defendants agreed to permit the plaintiff to use the said patent for a fee of RM9.50 per square meter of wall area built for all projects with effect from the date of the said agreement. Pursuant to the said agreement, the plaintiff utilised the said patent and the total fees payable to the defendants amounted to RM920,113 and continuing until 27 August 2009. The plaintiff has to date hereof paid the sum of RM42,818 leaving a balance outstanding amounting to RM877,295 and continuing until 27 August 2009

which is still owing to the defendants. The defendants state herein all payments of monies made by the plaintiff to the defendants for the use of the defendants' invention do not hinge upon the validity of the patent grant borne out by the terms of the agreement dated 6 May 1994. The defendants pray for a judgement against the plaintiff the sum of RM877,295 and continuing until 27 August 2009 together with 8% interest per annum from date hereof to date of realisation and costs.

[9] The scope of the patent is primarily found in the claims. Regulation 13 of the Patent Regulations 1986 provides that the claims must:

(a) define the matter for which the applicant seeks protection;

(b) be clear and concise;

(c) be supported by the description; and

(d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.

The defendants' said patent sets out the claims as follows:

Claim 1

1 A retaining wall comprising a substantially vertical panel (20) having a level pad (10) located underground as a foundation, a plurality of horizontal tie members (30) removable attached at one end to one side of the panel at pre-determined intervals and plurality of anchor member (30) the tie members removably attached to the other ends of tie members (40) removably attached to the other ends of (30) the tie member and the anchor members being arranged to be buried in the backfill material characterised in that the length of the tie members (30) are in the range of 0.8H to1.2H where H is the height of the panel.

Claim 2

2 A method of installing retaining wall according to claim 1 wherein, before the tie members (30) are installed at each level, the backfill material is spread to a desire depth and then compacted.

In the agreed facts (exh C), the defendants had conceded that the technical feature ie:

(a) a retaining wall;

(b) a substantially vertical panel;

(c) a level pad located underground as a foundation;

(d) a plurality of horizontal tie members removable attached at one end to one side of the panel at pre-determined intervals;

(e) a plurality of removing attached anchor members; and

(f) the tie members and anchors being arranged to be buried in the backfill material

have been anticipated except the length of the tie members (30) is in the range of 0.8H–1.2H where H is the height of the panel.

[10] The issue that needs to be determined by this court is whether the length of the tie members in the range of 0.8H–1.2H where H is the height of the panel ('the said range') is:

(a) new; and

(b) involves an inventive step; and

(c) sufficiently described in accordance with the requirements of the Patent Act 1983 and Patent Regulations 1986.

[11] The first task of the court in any patent action is to decide exactly what monopoly the patentee has been granted and this principle can be derived from the judgement of Withford J in *American Cynamid Company v Berk Pharmaceutical Ltd* [1976] RPC 231 at p 234 and states that:

> The claims should be considered without reference to the effect that the giving of any particular meaning may have on any issue of infringement, without reference to the result and effect so far as the attack on validity is concerned. The language used in each claim is in the end determinative, but each claim must be considered against the background of, in the context of the specification as a whole. The specification itself has to be considered in the context of the general field to skilled man in the particular field and they will read it against their knowledge of the prevailing conditions in the field at the time that the patent is granted, and against their knowledge of earlier work may have been done in this same field.

Therefore, an understanding of the claim is important prior to any determination of the invalidation of the defendants' patent.

[12] As the registered proprietor, the defendants are accorded certain monopolistic rights wherein it can control certain acts as provided in s 36 of the Act for a limited period. In order that the public does not infringe upon the defendants' registered patent, the defendants are required to file a specification with the patent office. The specification consists of the particulars, abstract, claim, illustration and description. The monopolistic right granted to the defendants is limited to the claim portion of the specification. Lord Russel of Killowen in *EMI v Lissen* (1939) 56 RPC 23 at p 39 described the function of the claim as follows:

> The function of the claim is to define clearly with precision the monopoly claimed, so that other may know the exact boundaries of the area within which they will be trespassers. Their primary object is to limit and not to extend the monopoly. What is not claimed is disclaimed. The claims must undoubtedly be read as part of the entire document, and not as separate document; but the forbidden field must be found in the language of the claims and not elsewhere. It is not permissable, in my opinion, by reference by some language used in the earlier part of the specification to change a claim which, by its own language, is a claim for one subject matter into a claim for another and different subject matter, which is what you do when you alter the boundaries of the forbidden territory. *A patentee who describes an invention in a body of specification obtains no monopoly unless claimed in the claims.*

I emphasise strongly that the judgment which says that 'A patentee who describe an invention in a body of specification obtains no monopoly unless claimed in the claims' is very crucial in determining the claims of the patent. The reasons why the emphasise was made is because *what is not claimed is disclaimed.*

INVENTION

[13] The invention is considered to be novel if it is not part of the prior art. The term prior art in Malaysia includes all disclosures to the public, global or local, either by written publication, oral disclosure, or by availability of samples. If a particular invention has been disclosed to the public by either one of the three ways above, it is said that the invention has been anticipated by prior disclosure. In fact, the contents of prior domestic applications are also considered part of the prior art (see s 14(2) of the Patent Act 1983).

All categories of inventions which satisfy the essential criteria of patentability, namely, novelty, inventive step and utility may not be patentable. It has been mentioned that each country which grants the patent, define the term 'invention' in its patent law for which patent can be secured in that country. Section 11 of the Patent Act 1983 states that an invention is patentable if it is new, involves an inventive step and industrially applicable. Whereas s 12 states that an invention means an idea of an inventor which permits in practise the solution to as specific problem in the field of technology. It may relate to products or process.

Lack of novelty constitutes the ground for the invalidation of the invention. A party that has been threatened or sued for patent infringement can counter attack the validity of the patent by proving that certain disclosures have been made about the patent. It is open for him to bring proof of available literatures that anticipates that invention.

INTERPRETATION OF THE CLAIM

[14] In interpreting the claim, the court required guidance as to the various

elements found in the invention and to come to an understanding of the technical terms involved. Despite the fact that the invention revolved around basic concept in the Reinforcement Soil System which relates to the building of the retaining wall, the arguments were complex and technical in nature and therefore, a higher degree of technical expertise maybe required. The preferred expert must be skilled in the relevant art and be independent.

Who is the best person that the court can rely on regarding the interpretation of the defendants' patent in relation to the claim, description and specification? Based on what I had said above, I am of the view that the best person to do so is the evidence of an expert. Even if the expert's evidence is provided and yet the court still has to come up with its own findings on the interpretation of the said patent. Courts have struggled to find an interpretive device which holds the patentee to the language he consciously chose, but does not permit the patent to be too readily circumvented. To me, the words chosen still have primary significance as pointed out by Lord Hoffman in *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2004] UKHL 46:

> The question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean. And for this purpose, the language he has chosen is usually of critical importance. The conventions of word meaning and syntax enable us to express our meanings with great accuracy and sublety and the skilled man will ordinarily assume that the patentee has chosen his language accordingly.

The patent document consists of four distinct parts:

(a) the claims;

(b) the description;

(c) the drawings; and

(d) the abstract

ANALYSIS OF THE EVIDENCE OF THE PLAINTIFFS WITNESSES

Claims

[15] There are two parts to claim 1 of the defendants' said patent. According to reg 13(6)(b) of the Patents Regulations 1986, the first part of the claim relates to the prior art while that second part relates to the invention in which that patent seeks to protect. The 1st part is separated from that second part by the phrase 'characterised in that'. The first part relates to the existing component of the system of retaining wall and that second part relates to the design of the proportionary of the length of the tie members to the height of the

retaining wall system. The system has four components such as:

(a) the vertical panel;

(b) the levelling panel;

(c) backfill materials; and

(d) horizontal tie members with free ends attached with anchor members.

Since the above features belong to the first part before the phrase 'characterised in that', it is clear that their features are part of the prior art and no protection or monopoly is claimed by the defendants over these features. The second part which the defendants claim protection is that the length of the tie members must be within the range of 0.8H–1.2H where H is the height of the panel ('the said range'). It is clear that the subject patent is claiming the said range as the only new feature of invention.

[16] According to PW3 'vertical panel' refers to what normally is described as facing panel in the article. The levelling pad is the pad on which the facing panel stands. 'Horizontal tie members' together with the 'anchor member' refer to what the industry normally refers to any anchor which provides passive resistance. The 'backfill material' are materials or soils that are placed behind the facing panels. The reinforcing elements are buried within the backfill materials. Evidence of PW1 and PW2 shows that each and every component or features of the said patent including that said range, has been disclosed in the prior art before the priority date and therefore there is absolutely nothing new in the defendants' said system. Moreover the way that the claims are phrased as mentioned shows that the defendants are admitting that the system has been disclosed except for the said range. Based on the way the claims are phrased, the said patent is primarily intend to protect the design of the defendants' retaining wall system. The defendants' claim protection for the length for the tie member to be within the said range of 0.8H–1.2 times the height of the panel.

[17] The said range is not new and lack inventive steps for the following reasons:

(a) Firstly, the said range has been disclosed in the codes of practice commonly referred to by practitioners in the field of Reinforced Soil even before the application date of the said patent. PW2 and PW3 in their evidence confirmed that the Code of Practice are used by professional engineers in the field of Reinforced Soil in Malaysia as guides to design and construct Reinforced Soils walls which meet the acceptable safety requirements in international practices. Most engineers would refer to the British Code of Practice, 'Technical Memorandum BE 3/78 Reinforced & Anchored Earth retaining Walls and Bridge Abutments for Embankments' (pp 150–201 B(a)) French Code of Practice 'Reinforced Earth Structure — Recommendations and Rules of the Art' published by

A the French Ministry of Transport in August 1980 (pp 202–204 B(a)).

(17.1) The British Code of Practice

(a) Technical memorandum (Bridges) BE 3/78" at page 170 of B(a) requires the tie members to be greater or equal 0.8 times of the height of the wall. In other words the recommended range is from 0.8H to infinity where H is the height of the wall. Hence, the engineer could have designed the tie members of the wall to 0.8H, or 0.9 H or 1.OH or 1.1 H or 1.2 Hor 1.3 Handsoon.

(b) The French Code of Practice., 'Reinforced Earth Structure - Recommendations & Rules of the Art' (at pages 221-224 of B(a)) recommended that the length of the tie members should be superior or equal to 0.7 times the height of the wall. In other words, the recommended range is from 0.7H to infinity where H is the height of the wall. Hence, the engineer could have designed the tie members of the wall to 0.7H, or 0.8H or 0.9H or 1.0H or 1.1H or 1.2H or 1.3H and so on.

These Codes of Practice clearly show that the acceptable safety range for tie members should be equal or more than 0.7 or 0.8 times of the height of the wall. In such situation, anyone following the Codes of Practice would likely to infringe the defendants' said patent unless they use the length of less than 0.8 H or more than 1.2 times the height of the wall. The said range is not an uncommon range used by engineers. As such, the existence of the said patent has severely restricted the practising engineer for following both the Codes of Practice. PW2 confirmed that these Codes of Practice are the fundamental guidelines which are generally followed by practicing engineers in the relevant field. PW2 is of the view that it is obvious to any person ordinary skilled in the art.

(b) secondly, the said range has also disclosed in a textbook by Colin JFP Jones entitled 'Earth Reinforcement & Soil Structures';

(c) thirdly, the said range has been used by engineers while designing reinforced soil walls. For example, as part of the design process one of the important steps is to check the stability of wall against sliding feature. The said range can be obtained by applying basic reinforced soil principles and formulae used for calculating, factor of safety of reinforced soil wall against sliding feature; and

(d) fourthly, the said range has been used in general projects in Malaysia in the construction of reinforced soil walls, prior to the priority date of the defendants' alleged invention.

[18] The Codes of Practice have been published and used widely in Malaysia

prior to the date of the application of the said patent which was 11 October 1988 (confirmed by PW2). Therefore there is nothing new or inventive on the said range which the defendants claim to be subject matter of their invention. The Code of Practice as stated above clearly destroy the novelty and inventiveness of the said patent since the codes clearly specify a range greater than or equal to 0.7 and 0.8 H. Clearly the said range falls within the ranges specified in the code because it is a subset of the range of greater than or equal to 0.7–0.8H. In other words, the said range 0.8H–1.2H is also a subset of 0.8 H to infinity. Likewise, the said range of 0.8H–1.2 H is also a subset of 0.7H to infinity.That is the said range falls within the ranges stipulated by both Codes of Practice. As such the said range is not new because it has been anticipated by both the codes. The said range also lack inventiveness because it does not require inventiveness to deduce the range (which is a subset) from a larger range specified by the codes.

[19] PW3 has referred to the said range in Colin JFP Jones textbook at pp 256–293 F of B(b) where the textbook has been commonly used in the universities to teach students on the design, construction and application of reinforced soil structures. It is also used by practising and engineers as a reference material to guide them in the design and construction of reinforced soil walls. At p 278 of B(b) the book clearly states that the recommended range of lengths of tie members for the proportioning of a reinforced soil wall is greater or equal to 0.8 H where H is the height of the wall. The said range clearly falls within the recommended range. The principles of Reinforced Soils and the formula for calculating the factor of safety can be found at p 72 para 6.3.1.1 p 276 of B(b) 'Earth Reinforcement & Soil Structures' by Collins JFP Jones. Hence, the said range is not novel and it is obvious to practising engineers.

[20] The said range is also invalid because it is desirable for basic principles of reinforced soil and therefore lacks inventive steps. PW3 also referred to document entitled ie Figure 12(b) at p 80 where it clearly shows that the length of tie members is 13.0 m while the height of the wall is 16.1m. Hence, the length of the tie member is 0.8H where it is the height of the wall. Figure 17 at p 85 also shows the length of tie members to be 0.8 m while the height of the abutment wall H is 8.25m (at p 83). Hence the length of the tie members is 0.97H. Both the lengths of 0.81 H and 0.97 H lie within the said range. Hence the said range has been anticipated by actual construction on site and obviously it does not involve any inventive step.

[21] The defendants are saying that their invention as disclosed in the subject patent is new because none of the prior art disclose this said range together with an 'anchor member in combination'. This is not true because a Technical Memorandum BE 3/78 Reinforced & Anchored Earth Retaining

Walls and Bridge Abutments for Embankments discloses a retaining wall system consisting of facing panels, levelling pad, backfill material, tie members and anchor members in a form of triangular loops. The tie members must have a minimum length of 0.8 H where it is the height of the wall. Hence, the British Code of Practice anticipated the said patent in every aspect including anchor member and the said range. PW3 said that the said range as the protected invention, nothing was said about the 'anchor members'. In fact anchor members are clearly included as part of the prior art.

[22] The defendants' patent does claim 'anchor member' or 'anchor block' (which is denied by the plaintiff), the use of 'anchor block' or 'deadman anchor' has been disclosed by many prior art such as US Patents 3,922,864 and 4,154,554 and 4,514,113 and articles by Wallace and Palmer. PW2 agreed that the defendants refers to the length of anchorage as a solution in stabilising a retaining wall and in fact the defendant has indicated that the invention seeks to stabilide walls retaining granular or cohesive backfill.

[23] 'Anchor members' found in claim 1 of the defendants' Patent No MY-103619-A is understood to represent the Anchor Block and anchor blocks or beams or any other shapes. PW2 also interprets 'anchor members' in the defendants' subject patent to include discrete precast concrete solid sections, continuous precast concrete sections, automobile tyres, treated timber slacks, plats, concrete blocks or combination of the above. The defendants are saying that all the prior art produced by the plaintiff are in respect of 'Anchored Earth' and 'Reinforced Earth' systems but their patented system is in respect of 'Multi-Anchor Wall'.

[24] 'Anchor Earth' is a type of 'Multi Anchored System' as described by Barry R Christopher et al. The defendants' purported invention is definitely also a type of Multi Anchored System and therefore any prior art on Anchored Earth is relevant. 'Reinforced Earth' is classified as a type of 'placed soil reinforced system' and both placed soil reinforced system and multi anchored systems come under the grouping of 'Reinforced Soil Systems'. PW2 in his evidence states that Multi Anchored Wall is a type of reinforced soil retaining wall and confirmed that Anchored Earth, Reinforced Earth and Multi Anchored Earth wall system all fall within the category of Reinforced Soil Systems.

[25] PW2 also confirmed that the defendants' subject patent specification ie the description did not specify what shape the 'anchor member' must take and only used the term 'anchors' in that descriptions. Therefore, it can be of any type of anchor members including triangular loop and not restricted to specific anchor member unless it is stated in the claim where in the defendants' claim there is none. 'Reinforced Soil Structures' written by Barry R Christopher et al,

and Collin JFP Jones, described the relationship between Anchored Earth and Reinforced Soil where Reinforced Soil is a generic name while Anchored Earth is a proprietary name.

[26] Anchored Earth is a form or a type of Reinforced Soil System or technology. It uses reinforcing elements which have anchors at its free ends. The reinforcing elements are embedded within the soil mass to provide stability. Resistance to pull out is provided by passive action of the anchors and friction along the shaft or tie members of the reinforcing elements. 'Multi Anchored Systems' is another category of Reinforced Soil System. According to the classification made by Barry R Christopher et al, under 'Multi Anchored System', there are American Geo-Tech System, Tension Retaining Earth System (TRES), Anchored Earth and Ladder Wall Systems which have been clearly explained by Barry R Christopher et al at pp 36–42 of bundle B(a). Clearly, the defendants alleged 'Multi Anchor Wall' is very similar to Anchor Earth and any other types of Reinforced Soil System because it still teaches a retaining wall system consisting of facing panels, levelling pad, backfill material, tie members and anchor members. Reinforced Earth differs from AE and Multi-Anchor Wall only in that it has every component except the reinforcing elements have no anchor members at its free ends. Nevertheless, Reinforced Earth is still a type of Reinforced Soil wall just like the alleged 'Multi-Anchor Wall system'.

[27] The words or term 'anchor members' in the defendants' patent convey the same meaning as found in figure 4.1.4(e) of p 272C, bundle B(b) and para 5.3.1.5 of p 27 E of bundle B(b) and figure 5.4 in Colin JFP Jones: 'Earth Reinforcement And Soil Structure'. Figure 4.1.4(e) of p 272C explained about the Anchor that it is a flexible linear elements having one or more pronounced protrusions or distortions which act as abutments or anchors in the fill or soil. They may be formed from steel, rope, plastic (textile) or combinations of materials such as webbing and tyres, steel and tyres or steel and concrete. Anchor members also does not form an intergral part of the shaft or otherwise make difference to the working of the Anchor Earth System. This is because AE System can consist other forms of anchor members besides the loops. According to PW2 it is a matter of construction and delivery to the site and most of the contractors and practitioners prefer to deliver separate components where the loops will be attached to shaft at the site. Some contractors have ordered different parts and there is no significant improvement to it.

[28] The alleged 'invention' as described in the claims is intended to be used as such without any restrictions as to whether it is a 'Multi Anchored System', 'Anchored Earth' or 'Multi-Anchor Wall' System. In any event, these three systems employ all the components of the system described in claim 1 of the said patent. The defendants have made no attempt to patent any alleged new

characteristics of the reinforcing elements, be it an 'anchor', 'anchor block' or a 'loop' or a 'deadman' except for the length of the tie member, ie the said range. The only feature or 'characterisation' part is the said range. The patent does not teach that it is to be used for a restricted to the alleged 'Multi Anchor Wall System' only as Barry R Christopher et al has described another example of 'Multi-Anchor Wall' system existed well before the application date of the defendants' said patent.

[29] PW3 interprets 'anchor' as commonly understood in the field of reinforced soil technology ie it will includes steel plates, tyres, precast concrete blocks or deadman beams. In pp 142 of bundle b(a) of the said patent, the defendants also admitted that the anchors are to be understood in the general sense of words. The defendants gives specific example of anchors ie:

> The anchors (40) can be discrete precast concrete solid sections, continues precast concrete sections, automobile tyres, or treated timber slabs.

[30] In defendants' claim 1 of the said patent specification the term 'backfill material' is used to describe one of the components of the retaining wall system. In the summary of invention at p 3 of the defendant's subject patent, the description of the backfill material is granular or cohesive soil. However, the term 'backfill material' is used in claim 1.

ANALYSIS OF THE DEFENDANTS' WITNESSES

[31] The defendants state their case in respective to the defendants patent through their expert witness that is ('DW1'). DW1 became a professional engineer on 8 August 1998. Most of DW1 working life was spent in Polyfelt Asia Sdn Bhd. The principal business of Polyfelt Asia Sdn Bhd is in the manufacturing, marketing, distributing and selling of 'geosynthetic'. DW1 has 15 years working experience in the area of 'geothechnical /geosynthetics'. DW1 agree that he had never work in an engineering consultancy firm. DW1 only involved in marketing. DW1 agrees that he had not constructed a single Multi Anchored wall using deadman anchors. He is also does not involved in the construction of a single REW. DW1 also had not directly constructed any retaining wall system. DW1 also confirmed that his company Ten Cate Geosynthetics Asia Sdn Bhd had not constructed a retaining wall system or reinforced Soil Structure using anchor members. DW1 confirmed that he can give technical input in the geotechnical field of the Reinforced Soil and he agreed that his testimony is very technical. The purpose of giving such a lengthy account of the various Reinforced Soil Systems ie Anchored Earth (AE), Reinforced Earth (RE) and Multi anchored Wall System (MAW) is to provide or help this court with clear understanding of AE, RE and MAW.

[32] DW1 agreed that he is not a person having ordinary skill to comment on the subject patent of the defendants which falls within a distinct field of its own as claimed by DW1. DW1 also never testify himself as an expert witness in court before. DW1 confirmed that he is here in court to give technical input in the geotechnical field of Reinforced Soils and to enable the court to have a clear understanding of the AE, RE and MAW. In doing so, DW1 will provide a description, the functioning and mechanism and the differences in those systems. DW1 agreed that those systems can be obtained by consulting an authoritative textbook or write up on Reinforced Soil Systems. DW1 agreed that MAW, RE and AE are types of Reinforced Soil System and surprisingly at the same time, he said that he is not an expert in patent and the expert in the Reinforced Soil System. But later he disagree that AE and MAW as patented by the defendants are both Reinforced Soil System and designed according to general and common reinforced soil principles. He went on further to explain under the heading of technical field of defendants' patent that the present invention relates to retaining walls and in particular to the process of stabilising walls using multiple anchors.

[33] He was confused when asked about the defendants' patent is a 'System Blind' ie there is no particular system of retaining wall mentioned in the description and claims of the defendants' patent except the title 'Multi Anchor Wall'. At that material time only, DW1 read the defendants' patent and he answered that there is a specific system of retaining wall mentioned but later he was asked what system of retaining wall was disclosed and the answer given by him was that the Multi Anchor Wall as suggested by the title only. Therefore, as a person having ordinary skill in the art he should be able to identify and show the system of retaining wall mentioned in the defendants' said patent. Further, DW1 was asked to explain the significance of such characterising portion in the claim and yet he failed to do so. He was asked about the 'characterised in that' when it is used in the claim of the defendants' patent. He answered that to his opinion it means that taking into account the entire sentence from line (1)–(8) as in backfill material. When the length of the tie members are used in the range of 0.8H–1.2 H where H is the height of the panel. Unfortunately when he was asked to explain the significance of such characterising portion of the claim and again he failed to do so.

[34] DW1 has stated that MAW can use a wide range of any suitable backfill and MAW System permits the use of frictional, cohesive frictional or cohesive soil ie any suitable backfill. When asked whether the claim protects any specific type of backfill material, quality or types of backfill to be used, the words 'cohesive', 'cohesive frictional', 'frictional' or word 'suitable', he answered 'No'. By reading through the evidence of DW1, I found that the DW1's

understanding on the defendants' patent are as follows:

(a) DW1 failed to find the word 'Deadman' in the defendants' patent specification claims;

(b) DW1 agreed that the use of precast deadman to anchor the facing panel is something already known and practised before the priority date of the defendants' patent;

(c) DW1 agreed that deadman anchor was already used by this type of retaining wait called 'Deadman Anchored Wall' as described by Barry R Christopher et al (Reinforced Soil Structure);

(d) DW1 also agreed that the use of 'Deadman' was already disclosed in the United States Patent 4,154,554 under the heading 'Summary of Invention' (see p 61 bundle b(a));

(e) DW1 also agreed that the issue of whether the anchor member is large or not is not a feature claimed by the defendants' subject patent;

(f) DW1 has stated that MAW is superior because it uses 'deadman anchor' but he did not give a definite answer in terms of what the defendants have stated in the patent;

(g) DW1 agreed that the use of 'anchor members' formed part of the prior art as the term 'anchor members' is found before the characterising part of the claims;

(h) DW1 agreed that according to claim 1 of the defendants' subject patent, the only protected feature of the defendants' subject patent is the said range of 0.8H–1.2H where H is the height of the panel. His agreeable statement here again subject to the advice of the defendants' counsel and not from his own stand;

(i) DW1 agreed that the defendants' patent specifications ie the description and the claims of the defendants' patent have not provided any reasons for choosing the said range ie 0.8H–1.2H and he admits that the defendants' patent or in the claims of the subject patent did not justify the selection of the said range. There is also no explanation as to how the said range supposed to overcome any disadvantages. DW1 only presumed that there must be some justification provided by the defendants even though it is not spelt out in the patent's specifications. Thus, he is not sure of himself;

(j) DW1 also agreed that the defendants have not provided in the patent specifications (ie the descriptions and the claims) any proof or data to support the said range possesses some technical improvement at all. He then agreed that it comes under the heading 'Specific Example'. DW1 did not know why the said range was chosen by the defendants as an alleged inventive concept. He too did not know from reading the

specifications whether the defendants might have chosen another range of 0.8H–1.19H instead of 0.8H–1.2H. DW1 agreed that according to the defendants' subject patent the said range did not possess any improvement when compared to the prior technology. Subsequently he agreed that from the plain reading of the specifications of the defendants' subject patent, a person ordinary skilled in the art will not know what technical improvement the said range possesses. He also said that the capitalised terms ie 'Tension Resistance', 'Pullout Resistance', 'Passive Resistance', 'Slip Filed' and even 'deadman anchor' was not found in the descriptions and claims of the defendants' patent. He further agreed that the purported explanations on how the elements work are nowhere to be found in the defendants' patent specifications;

(k) DW1 agreed that the descriptions of the defendants' patent only talk about the 'arrangement' of the various components namely 'a substantially vertical panel having a level pad located underground as a foundation, a plurality of horizontal truss members removably attached at one end to one side of the panel at predetermined intervals and a plurality of anchor members removably attached to the other ends of the truss members, the truss members and the anchor members being arranged to be buried in backfill material';

(l) in DW1's examination in chief evidence, he stated that the design rules governing the internal stability of Reinforced Soil Systems designs pertaining to the following steps:

(i) tension resistance in the tie element/member which means to prevent failure of the tie element/members by breakage; and

(ii) pull out resistance on the tie element/member which means to prevent failure of the tie element/members by pullout and the design rules for the RE and AE system pertaining to (a) above are the only design rules applicable to the MAW system.
DW1 believe for MAW that the passive resistance on the vertical surface of the deadman anchor, wherein, the adjustable lengths of the tie members places the deadman anchors in corresponding distances from the facing panel so as to optimise the slip field size influenced by the deadman anchors, beyond the potential failure plane, that can be achieved in relation to the quality of the backfill. This means that the tie member length can be adjusted to maximise the slip field size of the deadman anchors depending on the soil quality. When good quality backfill such as frictional field is used, the length of the tie members are towards the lower limit of 0.8H and conversely, when the inferior quality backfill such as cohesive fiil is used, the tie members are lengthened towards the upper limit of 1.2H accordingly. Having said that, his above explanation was based on his expert interpretations having the background knowledge on

reinforced soil systems, nevertheless he admits that his explanation regarding the design rules are not found anywhere in the defendants' patent.

(m) DW1 said that the defendants' patent does not describe about the variable length of the tie member is to optimise the slip field and also slip field beyond the 'potential failure plane';

(n) DW1 informed the court that he is not trying to rewrite the patent but to explain how the MAW system with a 3D anchor block works based on the expertise and the background experience that he has in his training on reinforced soil structures. Despite his lengthy explanation in his witness statement as well as his evidence in cross-examination and re-examination, surprisingly to me, he admits that he is in fact rightly not reading the defendants' patent accordingly (see Q&A 240 – cross-examination DW1);

(o) DW1's testimony regarding the length of tie member is not consistent. Firstly, he said that the length of tie member is never fixed but later in his evidence, he informed the court that his evidence earlier was not correct because the length has to be fixed to design the pullout resistance. Again, he further explained that the length can be changed when the pullout resistance is not sufficient. With his statement, I am of the view that the length of tie member is variable and not fixed because it needs to be determined by the designer;

(p) DW1 agrees that Collin Jones at p 278 of bundle B(b) has stated that 'The minimum length of reinforcement is often taken to be 0.8 H or 5m'. Collin Jones advises that the length of reinforcement have a minimum value when the length of reinforcement is variable depending on the calculation taking into consideration various factors. Therefore, the idea of specifying a minimum value for the length and not fixing the upper limit is already taught by Jones;

(q) DW1 also agreed and admitted that the length of anchorage is not fixed but to be determined by calculation. To support the DW1's admission in regards to the above statement, I refer to p 140 of bundle B(a) line 22–26 of the defendants' patent where it says that 'To stabilize the retaining wail, an appropriate anchorage can be provided. It is preferable to determine the length of the anchorage by calculation, so that the maximum forces of the anchorage can be transmitted to surrounding backfill'.

Therefore, it is undeniable to accept his admission in his evidence that his area of specialisation is in geosynthetic which is a different field altogether.

[35] DW1 agreed that he has not constructed a single multi anchor wall using deadman anchors as well because TCGA does not design anchor walls and this is a conflict of interest to the company's policy. He confirmed that he gained the basic fundamental and basic grounding of the art through the training and the studies that he had gone through in his engineering degrees as well as in his PHD research work. I would say that his evidence is more academic as he had never been involved practically in the said construction field. During re-examination, DW1 was asked so many questions about patents and was objected by the plaintiff's counsel because he is not an expert in patent role but the defendants' counsel stressed that even technical people do read patent too. As I have said earlier, DW1 has admitted that he is not an expert in patent, therefore, he is not in the best position to explain about other people's patent and more so the defendants' patent (see Q&A 159 — cross-examination: DW1 has said that he cannot give a definite answer in terms of what the Defendants have stated in the patent.

[36] In re-examination, DW1 also said that he chose not to maintain his answer in Q 210–230 in the cross-examination regarding:

(a) the reasons for choosing the said range;

(b) the defendants' justification in selection of the said range;

(c) the advantages and disadvantages of the said range; and

(d) the said range is given as preferred embodiment or examplery.

DW1 further said that he changed his stand because he found the information and he was asked the questions in a very confined context. In this confine, DW1 confirmed that he sometimes could not answer the question conclusively. DW1 also said that he could not gather his thoughts or to find the information. During re-examination of DW1, again I was shocked and taken by surprise with full of curiosity as to why DW1 as an expert claimed, gave such an answer. With all the curiosities again I took the opportunity to ask DW1 as to why he had changed his stand and his uncertainty. He tendered his apology to me and answered that, (I quote):

> Well, I beg your pardon, after the cross examined there is a lot of things run through my mind. And when I look at some of the answers that I have given, in plain terms, I was just about to get my hand on my head and say, 'Why do I say those?'.

Again, I pause and wonder whether the plaintiff's counsel questions were too difficult or complicated or too vague or remote for DW1 to answer and come to a conclusion that amount for him to say 'Why do I say those?' or were those answers given by him during cross-examination has affected badly the defendants' case which finally made him change his stand. If DW1 claimed

that he has given such a detailed and lengthy explanation about the system then, as an expert he should be able to relate his explanation to the defendants' patent.

Further, I have suggested to DW1 that what he did was an afterthought? Then, DW1 had agreed with me and I quote, (Q&A between DW1 and myself):

> Court: Can I just say this after thought? This is not from both of them but from me, because I believe as an expert you have read whatever the description by the Defendants' Patent, I think that you should know what it's all about. So, but unfortunately that you answered in a different way and now you changed your stand.
>
> Witness: Correct, My Lady. To me, I never expect that an expert would give such kind of answer.

[37] DW1 in re-examination (Q&A 165) was asked about the length of tie member is variable and he agreed. The reason why he agreed that such statement because he was actually confirmed that L is a variable because this equation deals with internal stability and analysis of the design of the Reinforced Soil System. In fact DW1 made a remark that plaintiff's counsel has misunderstood the design. To determine whether DW1's statement is true as regards to the misunderstanding his answer and the design by the plaintiff's counsel, I therefore refer to Q&A 246 and 247 (cross-examination DW1) as follows:

> 246 Q: Therefore the length tie member is never fixed, right?
>
> A: Yes, it is correct.
>
> 247Q: In other words, the length of the tie member is variable?
>
> Witness: I would like to answer the Q 246. Going back to the equations found in BE 3/78 whereby at page 164 of Bundle B(a), the shaft resistance shown here is basically the pullout resistance to the rod element only. In other words, to determine the shaft resistance which is also the pullout resistance, normally, in most cases in the design, the L is fixed. Without fixing the L, one cannot calculate what is the shaft resistance or the pullout resistance. In this context, it is not entirely true that the tie member never fixed and I like to say this in the question that had been asked earlier in terms of variable. My answer was that it could be a variable in terms of the length of reinforcement.
>
> Counsel: So, your answer to Q 247 could a variable.
>
> Witness: It could be a variable but in the design, normally how we calculate the pullout resistance, we fix the length and then we calculate the pullout resistance.
>
> Counsel: Now, we are talking about the length not the pullout resistance.
>
> Witness: I understand what you are saying. So, what I am saying here is

that if the length, if you want to calculate the pullout resistance, so you have got to fix the length. So, the length is fixed. *You cannot say that it is never fixed*, (DW1's answer in Q246, it is correct the length tie member is never fixed).

Counsel:Before you decide what length the L, will take, the L can be any length. You need to calculate it according to the conditions of the site, safety factors and all that.

Witness: The only way that you can calculate the length or guidelines given in terms of the length or to fix the length is L= 0.8H or 5 meters whichever is greater. So, you can choose a length and then substitute that into the formula as being given in page 164 to calculate the pullout resistance.

Counsel: But the words used, (Counsel reads) 'Shall not be less than the greater of the following' So, it can be greater, it cannot be less than 0.8H. So, logically anything beyond 0.8H is possible. You have already said so.

Witness: Yes, it is possible. But I have to qualify also that in BE 3.78 is 0.8H or 5 meter, So, the 5 meter should not be taken at.

Counsel: or 5 meter or whichever is greater but it cannot be greater even that one.

Witness: Correct.

Counsel: So, your answer.

Witness: My answer is Q 245, it is not correct.

Court: So your answer to Q 246 is not correct

Witness: Yes, it is not correct You can fix it. You fix the length to design the pullout resistance, That's what I am saying.

Counsel: We are not really only concerned. We are more interested in the length of the tie member of the pullout resistance.

Witness: I am looking from the question that you asked me it in the terms of the design. When we talk about the design, in order to calculate the pullout resistance, I actually have to fix a length or seam a length to calculate that. That is clearly explain in the equations. The equation says that the pullout resistance is dependent on the following properties and one of this is the length of the reinforcement.

Witness: I am looking from the question that you asked me it in the terms of the design. When we talk about the design, in order to calculate the pullout resistance, I actually have to fix a length or seam a length to calculate that. That is clearly explain in the equations. The equation says that the pullout resistance is dependent on the following properties and one of this is the length of the reinforcement.

Counsel: So, you said that the L must be fixed.

Witness: Correct.

Counsel: So, what is your answer to Q 247. It can be a variable, is it.

Witness: It is possible to be a variable but the answer that I give is according to the question that you asked is it possible.

Hence, the remark alleged by DW1 that the plaintiff's counsel misunderstood the design is not true. In fact, DW1 gave the same answer repeatedly ie 'It is possible to be a variable'.

[38] DW1's evidence does not help in determining the meaning of the claims of the subject patent. His evidence is more towards demonstrating the different types of Reinforced Earth (RE), Anchored Earth (AE) and the alleged the Multi Anchor Wall (MAW). The terminologies as contained in the glossary that he has offered to explain are not even found in the subject patent. DW1's lengthy explanations has made no reference to the subject patent at all. DW1 also failed to show to this court that the subject patent teach about the alleged advantages of dimension of deadman anchor or that the dimension of the deadman is to exploit passive resistance or otherwise excessively.

[39] After hearing the DW1 evidence in total, the court must carefully observe the DW1's evidence in total. This is due to the inconsistency of DW1 in giving evidence. The court also has to be very cautious in determining the explanation provided by DW1 whether it is really related to the defendants' patent in the aspect of the claim, description and the claims of the said patent. This is very important as the defendants had called upon DW1 who is a person skilled in the art to assess the intention of the defendants in choosing certain terminology in the said patent that can be assessed by him.

THE LAW

[40] DW3 alleged that the plaintiff is using defendants' technology in building a retaining wall in their project and DW3 claimed that the AE wall means Nehemiah Anchored Earth Wall which is copy of the defendants' patent. The subject matter that the court has to decide in this case is not about whether the plaintiff has infringed the defendants' patent because there is no evidence to support on that alleged infringement. What the court has to decide is about the validity of the defendants' patent that is whether the defendants' patent is patentable ie new, involved an inventive step and is industrially applicable. I am of the view that whether the defendants' patent claim is new or not is to be decided as a question of fact and it can only be derived from the evidence of witnesses.

[41] Whether the plaintiff is qualified to invalidate the defendants' patent? A

The plaintiff institute this action against the defendants under s 56(1) of the Patents Act 1983 where this section allows any aggrieved person to institute court proceedings against the owner of the patent for the invalidation of the patent. The plaintiff alleged that they are the aggrieved person to the defendants' patent and this can be shown in the PW3's evidence as follows: (see Q&A 82 – PW3's EIC). PW3 explained the chronology of the matter to illustrate the serious implications of allowing the said patent to remain on the register. According to PW3, in 1984 Transport and Research Laboratory, UK (TRRL) filed and was subsequently granted the patent for the system called 'Anchored Earth'. Then, in 1995, Collin Jones published a book to teach engineers how to design reinforced soil structures including Anchored Earth and also the use of various types of anchors as soil reinforcements (refer to p 272C–272D of bundle B(b) 'Reinforcement can take many forms depending largely upon the material employed. Common forms are sheets, bars, strips, grids and anchors (Figure 4.14)'. Colin Jones taught that the length of tie members must have a minimum length of 0.8H where H is the height of the wall. B C D

[42] In 1978, (revised in 1987) the British Code of Practice came into being to govern the design and construction of Reinforced Earth and Anchored Earth. Among other things, the Code specifies that the tie members must have a minimum length of 0.8H where H is the height of the wall. In 1988, the defendants filed an application to patent and to monopolise the use of the retaining wall system that has all the features of an 'Anchored Earth' wall system which the defendants renamed 'Multi Anchor Wair'. The novelty and inventiveness of the defendants subject patent rest on the claim that the tie members have lengths with the range of 0.8H–1.2H where H is the height of the wall. E F

The defendants' patent was granted in 1993. Before 1993, all engineers including PW3 in Malaysia were freely allowed and have the liberty to design and construct retaining walls with tie members of any length they wish so long as the wall that was designed was safe and cost effective. In order to comply with the British Code, engineers generally design the length of tie members to greater than or equal to 0.8H where H is the height of the wall. However, after 1993, no one else except the defendants are allowed to design or construct retaining walls within the said range of 0.8H–1.2H. It is to be noted that large number of the lengths of the tie members in use in the Reinforced Soil industry in Malaysia and elsewhere in the world are within the said range. PW3 stressed that the defendants have never invented the Anchored Earth technology. It was invented by TRRL. The British Code specified the minimum lengths of tie members to ensure sound engineering practice in the construction of the Anchored Earth walls. Years later, the defendants claimed patent's protection for a range that is already in common practice in the field of Reinforced Soil G H I

walls. As a result, engineer like PW3 is found to be infringing the patent whenever PW3 design a wall with tie members within the said range unless PW3 pay a licence fees. In fact, TRRL who is the original inventor of Anchored Earth would be infringing upon the said patent as well if it were to follow the British Code that stipulated the required minimum length. Of course, to get by the said range, one could design walls with tie members longer than 1.2H, The wall would be unnecessarily huge and costly. As such, it is very unfair for the said patent to remain on the register. The granting of such patent would tantamount to allowing the patenting of the range of diameters of a wheel which has already been invented by someone else. PW2 has been advised by the solicitor for the plaintiff that dimensional designs that lack inventive steps are non-patentable. PW3 believe that the defendants filed such a claim mainly to obtain an unfair advantage over the said range so that any person who uses the tie members within the said range would have to pay a licence fee to the defendants or face civil actions for infringement of their patent. This is also unfair especially the said range has been anticipated by the recommendations of the Codes of Practice.

In order for the plaintiff to successfully invalidate the defendants' said patent, the plaintiff has to comply with the requirements provided under s 56(2) of the Patent Act 1983. The plaintiff also seeking a declaration order under s 62 of the Act that neither the use of the process as described in the plaintiff's Anchor Earth System herein referred to nor the said Anchored Earth System considered as an article nor the supply thereof to third parties constitute an infringement of Malaysian Patent No MY- 103619-A.

[43] The issue of lack of inventiveness is to be answered by the person skilled in the art. In this case, the plaintiff has called three witnesses. PW1 is a patent expert whereas PW2 and PW3 are the persons skilled in the art. The defendants have also called three witnesses whereby DW1 is the person skilled in the art (the expert), DW2 is an ordinary witness and DW3 is the inventor. During cross-examination, the defendants' counsel informed the court that DW1 is not a patent expert but he is an engineering expert. If the defendants' counsel is going to maintain his stand that DW1 is not a patent expert then, I believe that DW1 is not in the position to explain, to verify, to elaborate, to comment, to confirm and to testify the defendants' patent. In relation to that I would say that the only witness left as a patent expert is PW1 who is a patent attorney specialised in drafting patent specifications, prosecuting patent application, commencing and managing patent opposition matters and providing commercially sensitive advice on a range of intellectual property issues. PW1 area of speciality on patent matters involves civil and structural engineering and therefore, his evidence should be taken into consideration accordingly. PW1 evidence confirmed that no description is provided to explain why this range is relevant, or what advantage is gained by having reinforcement of this length, as against reinforcement being longer or shorter. PW1 went on further said that

if the defendants claim that the length of the tie members having a range of 0.8H–1.2H is to be novel, this range would clearly be anticipated by the range greater than 0.8H or greater 0.8H as prescribe by the document (refer to Technical Memorandum BE 3/78 (revised 1987) Reinforced and Anchored Earth Retaining Walls and Bridge Abutments for Embankments, published by the UK Department of Transport in 1987). As the patent makes no reference to why 1.2H is relevant, then this is just an arbitrary limit, and this is therefore identical to the range from the citation of the said document. PW1 concludes that all features of the claims in the defendants' patent have been anticipated, and that therefore, the patent is not novel.

[44] After analysing all the evidences adduced before me and since DW1 has admitted that he is not a person having ordinary skill in the relevant art, I, therefore conclude that there is no evidence tendered by the defendants on this crucial issue. What is left before the court now is the evidence of PW2 and PW3 to contend with. I decided to agree with PW2's evidence whom I believe is the independent witness in this case who is also an expert and a person skilled in the art. I find that PW2's evidence as follows:

(a) he is an expert in the field of geo technical engineering and he has read the defendants' patent claims for Patent No MY 103619-A;

(b) he believes that the said range is not novel or new or lack of inventive step on the grounds that the subject of the invention has been published on or prior to the date of the defendants' patent application ie 11 October 1988 in the light of the following US patents and publications: such as US Patent No 3,922,864 (pp 52–57 Vol 1 bundle b(a) (refer to ms 182–184 Vol 1 – 12 March 2008);

(c) PW2 confirmed that the British Code of Practice for Reinforced Earth Structure was used well back in 1978. It is the standard reference book for the industry since 1978. At p 18, para 1.2 (p 170 of bundle b(a), it recommends a more conservative length of greater than 0.8H or 5 metres whichever is greater to be used. He also confirmed that at p 12 of the above said British Code, an anchor member is also disclosed at para 2.1.3.6 and illustrated in Fig 1A at p 13 where all these features anticipated claim 1 of the defendants' said patent could not be regarded as new or novel in the light of this prior art. PW2 believes that the defendants have used the guidelines provided by the above said codes of practice but limited the length of tie members to the said range so to avoid the anticipation in the language used in the codes. He is of the view that the said range of 0.8 H to 1.2H clearly falls within the meaning of

greater than 0.8H as disclosed in the British Code or greater than 0.7H as stated in the French Code.PW2 emphasized that these codes of practice are the fundamental guidelines which are generally followed by practicing engineers in the relevant field. Therefore, the said range as claimed by the defendants cannot be considered new or novel as such a range has already been used in practice since the earliest date of publication of the British Codes, ie 1978. When asked whether he is aware of any actual usage of the said range by practicing engineers in Malaysia, PW2 answered that he is aware that the said range has been used in the projects in Malaysia ie Road Embankment Wall at Damansara town centre in June 1985 and Bridge Abutment in Johore Bharu in May 1986;

(d) to PW2, the said range is obvious to him, in other words, it does not involve any inventive steps. Anyone who follows the British or French Code of Practice will be able to arrive at or deduce the said range. The said range is within common general knowledge of practitioners within the field of soil reinforcement;

(e) PW2 said that the said patent did not demonstrate the uniqueness of the said range of 0.8H–1.2 H to the working of the invention. The defendants failed to explain the technical advancement in the use of the said range in relation to the acknowledged prior art;

(f) PW2 also gave his views on the inventiveness of the use of anchors in the field of geotechnical engineering where he finds that it is not new or inventive about the use of anchors in the field of geotechnical engineering. The use of anchor blocks has been disclosed in the Codes of Practice, documents and textbooks referred by the plaintiff in the bundle of b(a) and b(b);

(g) PW2 said that in order for the structure to be stable, the length of the tie members must satisfy the safety requirements in each formula. If any of the tests failed, the length of the tie members would have to be extended until it meets the safety standards. Therefore, he is of the view that it is obvious to any person ordinary skilled in the art to realise that a range greater than 0.8H would be a common practice in the art and clearly involves no inventive steps. The defendants merely state a maximum length of 1.2H but did not state any reasons for doing so for the said patent;

(h) PW2 overrules the defence and counterclaims made by the defendants that the invention can use any good soil as backfill material. From his reading of the said patent, the defendants have never claimed in the said patent the use of any good soil as backfill material. Hence, there is nothing new about using any good soil as backfill material. A geotechnical engineer may use any good soil as backfill so long as he

complies with the standard Codes of Practice and satisfy the factors of safety. To conclude that, PW2 believe that such use of backfill material has already been disclosed in US Patent No 4,514,113 at p 69 bundle b(a) whereby the specification of the said patent said that 'It is to be understood that anchor blocks 26 and 26' maybe directly mounted or embedded in earth mass 18. Thus, an earth 18 is inserted behind frontal wall 22 anchor blocks 26 and 26' may be laid directly on various layers of earth mass 18, as shown in Fig 3'.

He further said that the term 'earth mass' is understood by an ordinary person skilled in the art to include granular and cohesive soil. Therefore, there is nothing new about the defendants' alleged invention in using backfill of any good soil as it is already disclosed in the said document. Furthermore, the use of any backfill does not involve any inventive step and a geotechnical engineer may used any suitable soil to suit his purpose;

(i) Based on the said patent, PW2 is of the view that the said range claimed by the defendants in the said patent has clearly been anticipated by the prior arts as mentioned by him. It also lack of inventive step as stated above and as such he is of the view that the defendants' said patent is invalid. PW3's evidence as a person skilled in the art also corroborate and support PW2's contention on the inventiveness of the defendants' said patent;

FINDING ON THE VALIDITY OF THE DEFENDANTS' PATENT

[45] After full observation and consideration of the defendants' patent in the aspect of the claims, the description, specifications and abstract, I find that the said range claimed by the defendants in the said patent is insufficient, vague and incomplete. The reason is that by looking at the claim itself, the technical field, the background art, the description and the summary of invention, I do not find any explanation about the benefit and the advantages of why the defendants chose or select the said range of 0.8H–1.2H to build a retaining wall. It is just an example of the length of one tie member with the length of between 0.8H–1.2H in building a retaining wall. So, in this situation, the range is always variable according to the design by the designer. Since it is merely an example, then one can choose or select any range besides 0.8–1.2H. After scrutinising the whole evidence and the said patent, I, myself wonder why the defendants chose the said range to be in their claim. Therefore, it is not surprised at all when DW1 was asked about the advantages and benefits of the usage of this range in building the retaining wall, DW1 failed to express his view as an expert. Due to the lack of explanation as to why the said range was chosen it is not possible to understand the invention from the defendants' description, much less to achieve the advantageous effects of the innovation. I find that on the basis of insufficiency, where claims were broad and

indeterminate and of a speculative character, thus, the description of the invention and the method by which it was to be performed was insufficient and the benefits of doubt should be given to the plaintiff.

[46] It is settled law that a patentee must act towards the public uberrimae fidei and must give the best information in his power as to how to carry out the invention. He is therefore bound to tell the public all the steps that can advantageously be taken in carrying out the invention (see *Vidal Dyes Syndicate v Levinstein Ltd* (1912) 29 RPC 245 (CA)).The scope and extent of the patentee's monopoly is determined by the claims and anything that falls outside what is expressly claimed is permitted. It is therefore to the precise 'claim' language that regard must be had to determine whether some impugned invention falls within the exclusive rights of the patentee or not. Quite often it is not immediately clear whether that is the case or not and therefore claim 'construction' is required. I am of the view that a literal interpretation of the claims would mean that any small, functionally irrelevant variation would defeat the patentee's rights. Nonetheless the words deliberately chosen by the patentee are the anchor to which interpretation or claim construction must remain firmly attached. The court should not be invited to make good the failings of the language the patentee has had ample opportunity to choose with care (strictly emphasised by me). I agree with PW2 and PW3's evidence that the said range is obvious to them and I find that on balance of probabilities, the plaintiff has clearly establish its case and proved that the subject patent is invalid where it lacks in novelty, it doesn't involve an inventive step and it is insufficient in description or disclosure in regard to the special character or quality of the said range. Obviously if the subject patent is invalid then the licensee shall no longer be required to make any payment to the licensor under the licence contract (see s 46 and s 57 of the Patent Act 1983) and the plaintiff is entitled to repayment of the payment already made to the defendants. Once the subject patent is declared invalid, it is regarded null and void from the date of its grant and the agreement dated 6 May 1994 has become frustrated and has no legal effect. On the balance of probability I find that plaintiff has proved its claim and therefore I allowed the plaintiff's claim as prayed with cost and ordered that the amount paid that is RM42,818.51 be refunded to the plaintiff within 14 days from date of judgement.

As regards to the counterclaim filed by the defendants, since that the defendants patent is invalid, therefore the counterclaim becomes meaningless and it should failed unless the said patent is valid and it should also be dismissed with costs and the costs ordered is to be taxed against the defendants.

Claim allowed with costs, defendants' ordered to refund RM42,818.51 it had received from plaintiff and counterclaim dismissed with costs.

Reported by Ashok Kumar